

Construction Generated Noise		
Building Type	Domestic Housing	Distance (ft)
Construction Noise at 50 Feet (dBA Leq)		50
Construction Phase	All Applicable Equipment in Use¹	
Ground Clearing/Demolition	83	
Excavation	88	
Foundation Construction	81	
Building Construction	81	
Finishing and Site Cleanup	88	
North - Residential Uses		
Maximum Construction Noise (dBA Leq)		100
Construction Phase	All Applicable Equipment in Use¹	
Ground Clearing/Demolition	77	
Excavation (Site Preparation)	82	
Foundation Construction	75	
Building Construction	75	
Paving	82	
Average Construction Noise (dBA Leq)		220
Construction Phase	All Applicable Equipment in Use¹	
Ground Clearing/Demolition	70	
Excavation (Site Preparation)	75	
Foundation Construction	68	
Building Construction	68	
Paving	75	
Northwest - Walnut Canyon School		
Maximum Construction Noise (dBA Leq)		105
Construction Phase	All Applicable Equipment in Use¹	
Ground Clearing/Demolition	77	
Excavation (Site Preparation)	82	
Foundation Construction	75	
Building Construction	75	
Paving	82	
Average Construction Noise (dBA Leq)		370
Construction Phase	All Applicable Equipment in Use¹	
Ground Clearing/Demolition	66	
Excavation (Site Preparation)	71	
Foundation Construction	64	
Building Construction	64	
Paving	71	
South - Post Office		
Maximum Construction Noise (dBA Leq)		270
Construction Phase	All Applicable Equipment in Use¹	
Ground Clearing/Demolition	68	
Excavation (Site Preparation)	73	
Foundation Construction	66	
Building Construction	66	
Paving	73	
Average Construction Noise (dBA Leq)		475
Construction Phase	All Applicable Equipment in Use¹	
Ground Clearing/Demolition	63	
Excavation (Site Preparation)	68	
Foundation Construction	61	
Building Construction	61	
Paving	68	
East - Tanner Building		
Maximum Construction Noise (dBA Leq)		10
Construction Phase	All Applicable Equipment in Use¹	
Ground Clearing/Demolition	97	
Excavation (Site Preparation)	102	
Foundation Construction	95	
Building Construction	95	
Paving	102	
Average Construction Noise (dBA Leq)		85
Construction Phase	All Applicable Equipment in Use¹	
Ground Clearing/Demolition	78	
Excavation (Site Preparation)	83	
Foundation Construction	76	
Building Construction	76	
Paving	83	
Source: Bolt, Beranek and Newman, "Noise from Construction Equipment and Operations, Building Equipment, and Home Appliances," prepared for the USEPA, December 31, 1971. Based on analysis for Office Building, Hotel, Hospital, School, and Public Works.		

Construction Generated Vibration

North - Residential Uses		Closest Distance (feet):	55
	Approximate RMS a 66	Approximate RMS 73.000	
Equipment	inch/second	inch/second	
Pile Driver (Impact)	1.518	0.465	
Pile Driver (Sonic) Upper Range	0.734	0.225	
Pile Driver (Sonic) Typical	0.17	0.052	
Vibratory roller	0.21	0.064	
Caisson Drill	0.089	0.027	
Large bulldozer	0.089	0.027	
Small bulldozer	0.003	0.001	
Jackhammer	0.035	0.011	
Loaded trucks	0.076	0.023	
	Criteria	0.250	1700
Northwest - Walnut Canyon School		Closest Distance (feet):	320
	Approximate RMS a Velocity at 25 ft, inch/second	Approximate RMS Velocity Level, inch/second	
Equipment	inch/second	inch/second	
Pile Driver (Impact)	1.518	0.033	
Pile Driver (Sonic) Upper Range	0.734	0.016	
Pile Driver (Sonic) Typical	0.17	0.004	
Vibratory roller	0.21	0.005	
Caisson Drill	0.089	0.002	
Large bulldozer	0.089	0.002	
Small bulldozer	0.003	0.000	
Jackhammer	0.035	0.001	
Loaded trucks	0.076	0.002	
	Criteria	0.250	
South - Post Office		Closest Distance (feet):	70
	Approximate RMS a Velocity at 25 ft, inch/second	Approximate RMS Velocity Level, inch/second	
Equipment	inch/second	inch/second	
Pile Driver (Impact)	1.518	0.324	
Pile Driver (Sonic) Upper Range	0.734	0.157	
Pile Driver (Sonic) Typical	0.17	0.036	
Vibratory roller	0.21	0.045	
Caisson Drill	0.089	0.019	
Large bulldozer	0.089	0.019	
Small bulldozer	0.003	0.001	
Jackhammer	0.035	0.007	
Loaded trucks	0.076	0.016	
	Criteria	0.250	
East - Tanner Building		Closest Distance (feet):	70
	Approximate RMS a Velocity at 25 ft, inch/second	Approximate RMS Velocity Level, inch/second	
Equipment	inch/second	inch/second	
Pile Driver (Impact)	1.518	0.324	
Pile Driver (Sonic) Upper Range	0.734	0.157	
Pile Driver (Sonic) Typical	0.17	0.036	
Vibratory roller	0.21	0.045	
Caisson Drill	0.089	0.019	
Large bulldozer	0.089	0.019	
Small bulldozer	0.003	0.001	
Jackhammer	0.035	0.007	
Loaded trucks	0.076	0.016	
	Criteria	0.250	

¹ Determined based on use of jackhammers or pneumatic hammers that may be used for pavement demolition at a distance of 25 feet

Notes: RMS velocity calculated from vibration level (VdB) using the reference of one microinch/second.

Source: Based on methodology from the United States Department of Transportation Federal Transit Administration, *Transit Noise and Vibration Impact Assessment* (2006).

Construction Generated Vibration

15 Feet	Closest Distance (feet):		15
	Approximate RMS a 66	Approximate RMS 73.000	
Equipment	inch/second	inch/second	
Pile Driver (Impact)	1.518	3.266	
Pile Driver (Sonic) Upper Range	0.734	1.579	
Pile Driver (Sonic) Typical	0.17	0.366	
Vibratory roller	0.21	0.452	
Caisson Drill	0.089	0.191	
Large bulldozer	0.089	0.191	
Small bulldozer	0.003	0.006	
Jackhammer	0.035	0.075	
Loaded trucks	0.076	0.164	
	Criteria	0.250	1700
20 Feet	Closest Distance (feet):		20
	Approximate RMS a Velocity at 25 ft, inch/second	Approximate RMS Velocity Level, inch/second	
Equipment	inch/second	inch/second	
Pile Driver (Impact)	1.518	2.121	
Pile Driver (Sonic) Upper Range	0.734	1.026	
Pile Driver (Sonic) Typical	0.17	0.238	
Vibratory roller	0.21	0.293	
Caisson Drill	0.089	0.124	
Large bulldozer	0.089	0.124	
Small bulldozer	0.003	0.004	
Jackhammer	0.035	0.049	
Loaded trucks	0.076	0.106	
	Criteria	0.250	
25 Feet	Closest Distance (feet):		25
	Approximate RMS a Velocity at 25 ft, inch/second	Approximate RMS Velocity Level, inch/second	
Equipment	inch/second	inch/second	
Pile Driver (Impact)	1.518	1.518	
Pile Driver (Sonic) Upper Range	0.734	0.734	
Pile Driver (Sonic) Typical	0.17	0.170	
Vibratory roller	0.21	0.210	
Caisson Drill	0.089	0.089	
Large bulldozer	0.089	0.089	
Small bulldozer	0.003	0.003	
Jackhammer	0.035	0.035	
Loaded trucks	0.076	0.076	
	Criteria	0.250	
55 Feet	Closest Distance (feet):		55
	Approximate RMS a Velocity at 25 ft, inch/second	Approximate RMS Velocity Level, inch/second	
Equipment	inch/second	inch/second	
Pile Driver (Impact)	1.518	0.465	
Pile Driver (Sonic) Upper Range	0.734	0.225	
Pile Driver (Sonic) Typical	0.17	0.052	
Vibratory roller	0.21	0.064	
Caisson Drill	0.089	0.027	
Large bulldozer	0.089	0.027	
Small bulldozer	0.003	0.001	
Jackhammer	0.035	0.011	
Loaded trucks	0.076	0.023	
	Criteria	0.250	
¹ . Determined based on use of jackhammers or pneumatic hammers that may be used for pavement demolition at a distance of 25 feet Notes: RMS velocity calculated from vibration level (VdB) using the reference of one microinch/second. Source: Based on methodology from the United States Department of Transportation Federal Transit Administration, <i>Transit Noise and Vibration Impact Assessment</i> (2006).			

Moorpark Civic Center Traffic Noise 2025

Roadway Segment	Roadway Segment	24-hour Traffic Volume	Distance to CNEL from Roadway Centerline												Noise Level (CNEL or Ldn) at Distance from Roadway Centerline												Noise Level (CNEL or Ldn) at Distance from Roadway Centerline																																																																																																																																																																																																																																																																																																																																																																																																								
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Assumptions:

Simplified to 2 lanes
future
Noise path decay parameter for hard site

feet from centerline
feet from centerline
Time of Day:

Calculations using methods of Federal Highway Administration Highway Traffic Noise Prediction Model,
December, 1978. Baseline California vehicle noise levels from Caltrans, TAN 95-03, 1995
Source of standard assumptions:

97% Autos
2% Medium Trucks
1% Heavy Trucks
74.85% Day
13.68% Evening
11.47% Night
100.0%

Based on Riverside County of Health for sec

Site parameter: 0.0
1/2 lane separation 6.1
1/2 lane separation (future) 6.1
Lane separation: 2 + 4 + + +
consider moving lanes only
6 + + + + +
8 + + + + +

(0=hard, 1=soft)

California base noise levels:
Autos
Light trucks:
Heavy trucks:
5.2+38.8 Log10 (speed, mi/hr) = -2.8 + 38.8 Log10 (speed, km/hr)
35.3 + 25.6 Log10 (speed, mi/hr) = 30 + 25.6 Log10 (speed, km/hr)
25-31 mi/hr: 51.9 + 19.2 Log10 (speed, mi/hr) = 47.9 + 19.2 Log10 (speed, km/hr)
35-65 mi/hr: 50.4 + 19.2 Log10 (speed, mi/hr) = 46.4 + 19.2 Log10 (speed, km/hr)
31-35 mi/hr: straight line interpolation between above two curves

Assumptions:				Fleet Mix	
					97% Autos
	Simplified to 2 lanes	6.1 meters=	20.0		2% Medium Trucks
	future	6.1 meters=	20.0		1% Heavy Trucks
	Noise path decay parameter for hard site			Time of Day:	75% Day
					14% Evening
					11% Night

Based on Riverside County of Health for secondary, collectors and smaller

(0=hard, 1=soft)

California base noise levels:	
Autos	$5.2 + 38.8 \text{ Log}_{10}(\text{speed, mi/hr}) = -2.8 + 38.8 \text{ Log}_{10}(\text{speed, km/hr})$
Light trucks:	$35.3 + 25.6 \text{ Log}_{10}(\text{speed, mi/hr}) = 30 + 25.6 \text{ Log}_{10}(\text{speed, km/hr})$
Heavy trucks:	<div> <div>25-31 mi/hr:</div> <div>$51.9 + 19.2 \text{ Log}_{10}(\text{speed, mi/hr}) = 47.9 + 19.2 \text{ Log}_{10}(\text{speed, km/hr})$</div> </div> <div> <div>35-65 mi/hr:</div> <div>$50.4 + 19.2 \text{ Log}_{10}(\text{speed, mi/hr}) = 46.4 + 19.2 \text{ Log}_{10}(\text{speed, km/hr})$</div> </div> <div> <div>31-35 mi/hr:</div> <div>straight line interpolation between above two curves</div> </div>